
**Operations Agreement (OA) between the
Earth Observing System (EOS)
ClearingHUse (ECHO) and the Data
Partner**

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Month YYYY**

National Aeronautics and
Space Administration

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Date

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Date

Revision History

| Date | Version | Description | Author |
|------|---------|-------------|--------|
| | | | |

Preface

This Operations Agreement (OA) is controlled jointly by Earth Observing System (EOS) ClearingHouse (ECHO) Operations managed out of the Goddard Space Flight Center (GSFC) Earth Science Data and Information System (ESDIS) Science Operations Office (SOO) and the ECHO Data Partner. The ESDIS Project assumes the management of ECHO Operations and ECHO Development. The ECHO Operations Manager will maintain a master copy of this agreement. Both ECHO Operations and the Data Partner can propose changes to this document, but both parties must agree on the change. ECHO Operations agrees to make changes to the master copy once they have received e-mail acknowledgment and agreement from the Data Partner. Changes will be made in the form of a new revision. The revised version will then be forwarded to each ECHO Data Partner, which will then become the official version and supersede all earlier versions.

Questions and proposed changes concerning this document should be addressed to:

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ECHO Operations and the Data Partner agree to place this OA under the configuration management of their respective organizations and to maintain supporting information as specified in this agreement. They further agree to coordinate changes to this OA between and within their respective organizations.

Table of Contents

| | |
|--|-----------|
| REVISION HISTORY | 2 |
| SECTION 1. INTRODUCTION..... | 5 |
| 1.1 GENERAL | 5 |
| 1.2 PURPOSE | 5 |
| 1.3 SCOPE / INTENDED USER..... | 5 |
| SECTION 2. RELATED DOCUMENTS | 5 |
| SECTION 3. OPERATIONS OVERVIEW | 6 |
| 3.1 ECHO OPERATIONS OVERVIEW | 6 |
| 3.2 DATA PARTNER OVERVIEW | 7 |
| SECTION 4. METADATA | 7 |
| 4.1 DATA PARTNER SETUP..... | 7 |
| 4.2 INGEST | 7 |
| 4.3 METADATA CURRENCY AND AVAILABILITY | 9 |
| SECTION 5. DATA ORDERS..... | 9 |
| SECTION 6. NEW VERSIONS OF ECHO | 10 |
| 6.1 NEW VERSION TESTING | 10 |
| 6.2 NEW VERSION DEPLOYMENT..... | 10 |
| SECTION 7. ECHO USER AND END USER SUPPORT..... | 11 |
| 7.1 DAILY USER SUPPORT | 11 |
| 7.2 OTHER USER SUPPORT | 11 |
| SECTION 8. ECHO AND DATA PARTNER COMMUNICATION..... | 12 |
| SECTION 9. METRICS..... | 13 |
| APPENDIX A: ACRONYM LIST | 14 |
| APPENDIX B: POINTS OF CONTACT (POC) | 15 |

Section 1. Introduction

1.1 General

The EOS ClearingHouse (ECHO) is an enabling framework built by NASA's Earth Science Data and Information System (ESDIS) Project to allow different data systems and services to work together. ECHO is an open system based on Extensible Markup Language (XML) and Web Service technologies; its Application Program Interfaces (APIs) are published for use by the science community to exchange data, information, and services. XML messages that a user passes in and receives from the ECHO API interface conform to a set of Document Type Definitions (DTDs). The DTDs and API are published on the ECHO website, and the related documents are listed in Section 2.

An ECHO Data Partner is an entity that participates with ECHO to provide Earth Science data in the form of its metadata holdings. ECHO allows Data Partners to cache copies of their metadata within the clearinghouse. This metadata is available for user search and retrieval as well as navigation and discovery. Data Partners may also provide a mechanism to allow a client (e.g. user interface) to access the data holdings. ECHO allows Partners to cache copies of their metadata within the clearinghouse. Partners have complete control over what metadata is represented in ECHO on their behalf. They can insert, modify and remove metadata.

More information on ECHO is available on the ECHO website: <http://eos.nasa.gov/echo>.

1.2 Purpose

The purpose of this document is to define the working agreement between ECHO Operations and the ECHO Data Partner.

1.3 Scope / Intended User

This agreement covers the Data Partner roles and responsibilities in the operational ECHO system and the corresponding roles and responsibilities of ECHO Operations. Section 4 – 9 describes the ECHO and Data Partner roles and responsibilities for the following high level topics: Metadata, Data Orders, New Versions of ECHO, ECHO User and End User Support, ECHO and Data Partner Communication, and Metrics. This agreement will take effect once the ECHO Operations and Data Partner representatives have signed this document and last for the duration of ECHO operations. This document is for ESDIS project personnel, Data Partner personnel, and ECHO Operations personnel. The document assumes the reader is moderately knowledgeable about ECHO.

Section 2. Related Documents

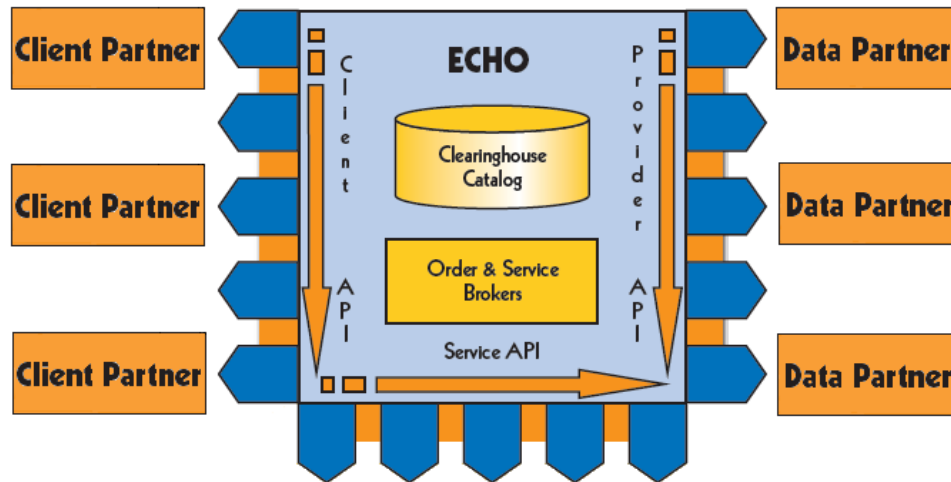
The following documents apply in defining this interface or in obtaining background information relative to this interface.

| Document Title | Date | URL |
|--|---------------------------|---|
| ECHO Operations Concept | March 2002 | N/A |
| ECHO Operations Plan | December 2002 | http://www-v0ims.gsfc.nasa.gov/v0ims/DOCUMENTATION/ECHO/EO_P1.0.pdf |
| ECHO Data Partner Application | September 2003 | http://www.echo.eos.nasa.gov/documents/DataPartnerApplicationForm.doc |
| ECHO API | Updated with each release | http://api.echo.eos.nasa.gov/echo/message_detail.html |
| ECHO Ingest Collection, Granule, and Browse DTDs | Updated with each version | http://eos.nasa.gov/echo/dtd/v5.0.1/collectioningest.dtd http://eos.nasa.gov/echo/dtd/v5.0.1/granuleingest.dtd http://eos.nasa.gov/echo/dtd/v5.0.1/browseingest.dtd (With each new version, “v5.0.1” in the URL will change to reflect the current version.) |
| ECHO Test Plan | Updated with each version | N/A |

Section 3. Operations Overview

3.1 ECHO Operations Overview

The ECHO system accepts metadata from different Data Partners, archives the metadata, and then allows Client Partners to give access through catalog search and order capabilities to end users. ECHO brokers the orders to the appropriate Data Partners. ECHO Operations (Ops) operates the ECHO system and provides user support and outreach. The ECHO Ops team can be reached at echo@killians.gsfc.nasa.gov.



3.2 Data Partner Overview

Section 4. Metadata

4.1 Data Partner Setup

ECHO Ops agrees to setup a Data Partner within ECHO in coordination with the Data Partner. Data Partner setup will include the establishment of a Data Partner account and Data Partner policies.

ECHO Ops agrees to support the Data Partner in establishing a metadata mapping from the Data Partner's data model and format to ECHO's data model and format specified by the ECHO Ingest Collection and Granule DTDs. ECHO Ops agrees to help the Data Partner understand the ECHO data model and to support the Data Partner's validation of the metadata against the ECHO format. ECHO Ops does not provide code or any other mechanism to achieve the mapping.

The Data Partner agrees to provide and maintain up-to-date provider user profile and provider policy information using the APIs and/or the ECHO Data Partner tools.

The Data Partner agrees to provide metadata and browse (if applicable) to ECHO in the ECHO format specified by the ECHO Collection, Granule, and Browse DTDs. Therefore, the Data Partner is responsible for creating the metadata mapping layer and completing the mapping between their own metadata format and the ECHO format.

4.2 Ingest

ECHO agrees to provide a mechanism for ingesting Data Partner metadata into the system. The mechanism will ensure the metadata the Data Partner provided to ECHO is the metadata that is stored in the database.

ECHO Ops agrees to schedule and monitor new metadata dataset and granule ingests and metadata updates.

ECHO Ops agrees to track and report all ingest errors and perform troubleshooting to determine the cause of the error, which may include coordinating with the Data Partner and ECHO Development team. Errors detected by ECHO during metadata ingest file processing are reported by the ECHO system in error log files and ingest summary report files. Some information on errors is also included in email notification messages sent by the system. ECHO Ops and a specified Data Partner contact receive these messages. As part of their ingest monitoring procedure, ECHO Ops will review the ingest summary and/or error log associated with each ingest job. When an error occurs, ECHO Ops agrees to investigate its cause and provide appropriate supplemental information to the Data Partner and the ECHO Development team to facilitate the resolution of problems in the Data Partner's metadata file generation tool and/or the ECHO system software. ECHO Ops agrees to report persistent ingest problems, and any problems requiring an ECHO software update, in the problem reporting and tracking system (see Section 8).

ECHO provides tools for the Data Partners to change some of their metadata, but ECHO will not change the Data Partner's metadata without the Data Partner's request, and overall, ECHO Ops is not responsible for correcting metadata.

On a routine basis (at least weekly), ECHO Ops agrees to provide updated ingest summary information on the project web site to report information related to ingest performance, including the start and stop date/time, duration, ingest rate, files processed, and information on the number of records processed, inserted, replaced, and deleted.

ECHO and the Data Partner agree to have their hosts and interfaces configured sufficiently to keep up, within a reasonable amount of time, with the daily metadata exports and incoming requests for data products outlined below.

The Data Partner agrees to send ingest files to an FTP directory defined by ECHO Ops. The Data Partner can choose to receive an e-mail to alert them that their metadata has been ingested.

The Data Partner will have a normal daily export rate of ___ collections per day, ___ granules' metadata per day, and ___ browse per day. The Data Partner is capable of processing and distributing ___ granules per hour on a 24-hour basis (___ granules/day) at start-up to complete the "historical data" run. Reprocessing and other activities, such as granule deletion or quality assurance, may create an additional ___ new granules daily and may create as many as ___ deletions per day and ___ granule updates per day, but on a sporadic basis. The ECHO System will support these metadata ingest volumes. ECHO Ops accepts that these numbers are subject to change. The Data Partner agrees to keep ECHO Ops aware of any changes to these rates.

The Data Partner agrees to track the output from their metadata mapping application and metadata and browse exporter. The Data Partner agrees to fix all problems with their metadata mapping application and metadata and browse exporter that cause metadata and browse files to fail on ingest.

The Data Partner is responsible for changing their metadata if a change is needed.

4.3 Metadata Currency and Availability

ECHO Ops agrees to support the Data Partner's use of the ECHO Data Management Service API.

ECHO Ops agrees to support the Data Partner's periodic metadata reconciliation, if the Data Partner chooses to conduct it. ECHO Ops agrees to support the Data Partner's use of the API to complete metadata reconciliation and agrees to provide additional technical support as needed. ECHO Ops agrees to provide API transactions to support metadata reconciliation.

The Data Partner agrees to provide and make visible current metadata in XML that conforms to the ECHO Ingest Collection and Granule DTDs describing orderable data holdings in the operational catalog and archive. The ECHO DTDs are provided on the ECHO website.

The Data Partner agrees to provide browse where applicable in the form specified by the ECHO Browse DTD. Supplying browse is part of the ingest process.

The Data Partner agrees to make metadata updates to ensure currency, so that end users only submit orders for available data.

The Data Partner is responsible for controlling visibility to their metadata. Visibility is controlled with Data Management Service API and access control lists (ACLs).

The Data Partner is responsible for building the tools necessary for metadata reconciliation and is responsible for reconciling their metadata in the ECHO metadata clearinghouse with their own data archives, if essential.

Section 5. Data Orders

ECHO Ops agrees to support issues with data orders and if necessary, monitor partner order activity and partner policies to ensure orders are received and responded to as needed.

ECHO Ops agrees to provide a partner test system for data and client partner testing. ECHO Ops agrees to work with Data Partners to make sure Client Partners have real

world data for client testing. The real world data will be stored in a provider separate from the Data Partner test providers. ECHO Ops will work with the client partner and data partner to schedule end-to-end tests as needed.

If the Data Partner has stated they will accept orders in their Provider Policies, the Data Partner agrees to support orders by rejecting, accepting, canceling, and closing orders and rejecting cancel requests as soon as possible using the ProviderOrderManagement API and/or ECHO Data Partner tools. The Data Partner agrees to provide a provider tracking ID or use ECHO's tracking ID, status information, total price, and estimated ship date for accepted orders. If possible, the Data Partner agrees to supply quotes with total price and expiration date, if provider policy accepts quotes on orders in ECHO. Data Partner agrees to update order status on all orders in ECHO.

Section 6. New Versions of ECHO

6.1 New Version Testing

ECHO agrees to deliver a system that meets the requirements and has complete functionality. ECHO Development and IV&V External Test group are responsible for following the ECHO Test Plan that is updated for each new version.

ECHO Ops agrees to notify Data Partners of the opportunity to participate in an End-to-End test of a new version of ECHO before that version replaces the current operational version.

The Data Partner agrees to assist in the End-to-End testing of new versions of ECHO when the Data Partner can schedule participation.

The Data Partner is responsible for testing their actions to make sure they understand their effects. The Data Partner is able to test their actions (e.g. ingest, data visibility changes) using the ECHO API (http://api.echo.eos.nasa.gov/echo/message_detail.html) and ECHO tools (e.g. PUMP).

6.2 New Version Deployment

ECHO Ops agrees to notify the Data Partner of upcoming new version deployment, including new functionality and API and DTD changes. ECHO Ops agrees to notify the Data Partner of downtime associated with the new version deployment at least one week in advance. ECHO Ops agrees to update the ECHO Data Partner tools to the new version.

ECHO Ops agrees to operate the new version and the previous version of the ECHO system for TBD days to account for Data Partner acclimation.

The Data Partner agrees to change to the new ECHO version unless it is fatal to continue operations. In the event of a major change, the Data Partner will negotiate with ECHO Ops how long to maintain the previous version of ECHO to resolve the fatal conflict. New versions of ECHO may contain DTD and API changes that affect the Data Partner.

Section 7. ECHO User and End User Support

ECHO users are Data Partners, Client Partners, and Service Partners.
End users are the Data, Client, and Service Partners' users.

7.1 Daily User Support

ECHO Ops agrees to be available to users from 9am to 9pm ET, Monday through Friday. ECHO Ops agrees to serve as the liaison for direct interactions between Data Partners, Client Partners, and Service Partners. End Users interact with an ECHO Client that should provide its own user services information. When a problem occurs, the End User should contact the Client User Services. If the Client can't figure out the End User problem, the Client contacts ECHO Ops. ECHO Ops figures out the problem. If the problem is with the Data Partner, then ECHO Ops resolves the problem with the Data Partner. ECHO Ops informs the Client of the resolution, and the Client then contacts the End User. ECHO Ops agrees to refer Client User Services and their End Users' to the Data Partner if there is a question about the Data Partners' data.

The Data Partner agrees to provide customer support services that will work with ECHO Ops to resolve end user problems (e.g. orders, availability of data holdings for search and order). The Data Partner agrees to provide customer support services to ECHO end users only if they have been referred by ECHO Ops or they have a valid ProviderTrackingID for an order for the Data Partner's data. The Data Partner is not responsible for answering questions about ordering products through ECHO if the user does not have the ProviderTrackingID, even if the order is for the Data Partner's products. The Data Partner agrees to refer these end users to the Client User Services of the ECHO Client they used. The Data Partner's customer support services agree to be staffed during standard local business hours, Monday through Friday.

7.2 Other User Support

ECHO Ops agrees to assist Data Partners in the use of Data Partner tools.

ECHO Ops agrees to provide training and hold workshops for users. ECHO Ops agrees to coordinate the logistics and topics for the training and workshop with the ECHO Technical Committee (ETC).

Data Partner agrees to attend ECHO training and workshops as considered appropriate by the Data Partner.

Section 8. ECHO and Data Partner Communication

ECHO Ops agrees to maintain an up-to-date 508 compliant website available through <http://eos.nasa.gov/echo> for users to find information about ECHO. The website will include upcoming release schedules and functionality and data partner resources. ECHO Ops agrees to survey the user community to assess their satisfaction with the website.

ECHO Ops agrees to hold a weekly community meeting called the ETC meeting to discuss operations issues and technical details.

ECHO Ops agrees to maintain a problem reporting and tracking system. ECHO Ops agrees to provide weekly Operations status reports by e-mail to the Data Partner on general and data partner-specific issues. ECHO Ops agrees to call or e-mail the Data Partner directly about problems specific to them.

ECHO Ops agrees to communicate downtime in the following way:

- 1) At the beginning of each work week, ECHO Ops will send notification of planned downtime events for the week (both the operational and test systems) to the ECHO Status mailing list, echo-status@killians.gsfc.nasa.gov. These items will also be posted on the ECHO web site, <http://eos.nasa.gov/echo>.
- 2) Prior to bringing the system down for a planned event, ECHO Ops will send a reminder to the ECHO status mailing list. People can be added to the ECHO Status mailing list at any time.
- 3) In the event of a confirmed system failure or other unplanned event, ECHO Ops will send notification to the ECHO Status mailing list as soon as possible (before the system is brought down or after we confirm a failure).
- 4) Following system restoration (from planned or unplanned event), ECHO Ops will send a follow up message to the ECHO Status mailing list as soon as possible after the system is restored.

The Data Partner agrees to participate in the ETC Operations and Development Community weekly meetings to provide science context, make policy decisions, affect requirements, approve designs, and assess priority of actions.

The Data Partner agrees to inform the ECHO Operations group of scheduling needs and operational problems and issues by e-mailing echo@killians.gsfc.nasa.gov or by calling ECHO Ops at 301-867-2026. The Data Partner will have the opportunity to prioritize action items, issues, and new feature functionality.

Section 9. Metrics

ECHO Ops agrees to provide the following metrics, which will be available to the Data Partner: number of ECHO registered users, number and list of registered clients, number and list of data partners, number of datasets, granules by dataset, and browse by dataset, number of subscriptions, number of submitted orders, amount of scheduled and unscheduled downtime, and lag time for metadata to be staged for ingest. For forward processing metadata, lag time is defined as the amount of time that transpires between metadata file receipt from the Data Partner and the start of metadata file ingest. Since historical and reprocessing load metadata must be strategically scheduled for ingest, lag time for this type of metadata is defined as the difference between the planned date/time for metadata file ingest and the actual start date/time of metadata file ingest. In addition, ECHO Ops agrees to provide search performance metrics.

ECHO Ops agrees to work with the ETC to determine what additional metrics are needed.

Appendix A: Acronym List

| | |
|--------|--|
| ACL | Access Control List |
| API | Application Program Interface |
| CCB | Configuration Control Board |
| DTD | Document Type Definition |
| ECHO | EOS Clearing House |
| ECS | EOSDIS Core System |
| EOS | Earth Observing System |
| EOSDIS | Earth Observing System Data and Information System |
| EROS | Earth Resources Observation System |
| ESDIS | Earth Science Data and Information System |
| ET | Eastern Time |
| ETC | ECHO Technical Committee |
| FTP | File Transfer Protocol |
| GSFC | Goddard Space Flight Center |
| IV&V | Independent Verification and Validation |
| N/A | Not Applicable |
| NASA | National Aeronautics and Space Administration |
| OA | Operations Agreement |
| POC | Point of Contact |
| PUMP | Provider User Management Program |
| QA | Quality Assessment |
| SOO | Science Operations Office |
| TBD | To Be Defined/Determined |
| URL | Uniform Resource Locator |
| USGS | United States Geological Survey |
| XML | Extensible Markup Language |

Appendix B: Points of Contact (POC)

ECHO POC

| What | Details | POC Title/Name | Used by | Used for |
|--|---|------------------------------|---|--|
| Policy Decisions | 1 (301) 614-5365 Vanessa.L.Griffin@nasa.gov | ESDIS SOO Manager | Data Partner Manager | Making Policy Decisions |
| Policy and Problem Resolution | 1 (301) 614-5318 Beth.E.Weinstein@nasa.gov | ECHO Operations Manager | Data Partner Operations Manager or Supervisor | Resolving Problems |
| Customer Services Support | 1 (301) 867-2026 echo@killians.gsfc.nasa.gov | Customer Support Coordinator | Data Partner User Services | Customer Services Support |
| Telephone Number E-mail address Fax Number | 1 (301) 867-2026 echo@killians.gsfc.nasa.gov | ECHO Production Analysts | Data Partner Operations Center | Information exchange and Problem Reporting |
| Problem Resolution Contact Email | 1 (301) 614-5318 Beth.E.Weinstein@nasa.gov 1 (301) 614-5365 Vanessa.L.Griffin@nasa.gov | ECHO Data Operations Manager | Data Partner Operations | Problem escalation |

Data Partner POC

| What | Details | POC Title/Name | Used By | Used for |
|-------------------|---------|---------------------------------|--------------|-------------------------|
| Policy Decisions | | Data Partner Operations Manager | ECHO Manager | Making Policy Decisions |
| Problem Reporting | | Data Partner | ECHO DAAC | Reporting Problems |

| | | | | |
|--|--|------------------------------------|------------------------------|------------------------------------|
| | | Operations | Coordinator | |
| Customer Services Support | | Data Partner Customer Services | ECHO Operations Manager | Customer Services Support |
| Address | | Data Partner Operations | ECHO Operations Manager | Ingesting the data from ECHO |
| Telephone Number E-mail address Fax Number | | Data Partner Operations Center | ECHO Data Operations Manager | Miscellaneous information exchange |
| Problem Escalation Contact | | Data Partner Operations Supervisor | ECHO Data Operations | Problem escalation |